435.36
05/15/98
Rev. 02

**NEW SITE IDENTIFICATION**

| **Part A - To Be Completed By Observer** | |
|---|---|
| 1. Person Initiating report: David Michael | Phone: 6-6914 |
| Contractor WAG 1 Manager: Doug Kuhns | Phone: 6-8226 |
| 2. Site Title: TAN 616 Building | |

3. Describe the conditions that indicate a possible inactive or unreported waste site. Include location and description of suspicious condition, amount or extent of condition and date observed. A location map and/or diagram identifying the site against controlled survey points or global positioning system descriptors shall be included to help with the site visit. Include any known common names or location descriptors for the waste site.

The TAN-616 Evaporator Pit and associated system are proposed as a new site under the FFA/CO for WAG-1 based on the high potential of a past release of contaminants to the environment. The specific areas assumed to cause the potential release include the evaporator pit, the waste process piping, and the pump room. Releases from these areas have resulted in contaminated floors and walls, soils under the building, and soils surrounding the building.

The TAN 616 Liquid Waste Treatment Facility (see photo 1) is located within the Test Support Facility area of the TAN site at the INEEL. The facility was constructed in 1955. The waste evaporator system operated from 1958 until 1970. The TAN primary radioactive waste evaporator was designed to collect, treat, and concentrate radionuclide-contaminated liquid waste from TAN-607 facility laboratories, hot shop, warm shop and decontamination drains. Waste processed through the evaporator includes Resource Conservation and Recovery Act (RCRA) f-listed solvents. The TAN 616 liquid waste treatment facility is down stream of the V-1, V-2, V-3 and V-9 tanks. The TAN 616 liquid waste treatment facility processed the waste from the V-tanks.

The waste evaporation process located in TAN 616, operated successfully for several years until the evaporator began to leak waste process solution onto the evaporator pit floor due to corrosion stress cracking. The vessel was removed from the facility, and the leaking section was repaired. The rebuilt vessel was reinstalled and the evaporator system was restarted and successfully operated for several years; however, the evaporator vessel again developed corrosion related leaks, resulting in waste process solutions leaking onto the evaporator pit floor area. The resulting contamination releases from the evaporator vessel failures contributed to current high radioactivity levels in the evaporator pit area. Similarly, contamination within other areas of the building is possibly due to leaking pumps and piping/valving systems, or from migration of rainwater infiltration through the leaking roof and/or personnel traffic within the facility. In 1970, the evaporator process was permanently shut down, and the TAN 616 liquid waste treatment facility was deactivated.

Failing TAN 616 facility roofing system and equipment access hatches resulted in a major increase in rainwater/snowmelt infiltration into the building. In 1993, a new roof was constructed over the facility. During the time prior to the repair of the roof, rain and snowmelt run-off water was leaking into the building through various roof penetrations, producing as much as a foot of water (see high water mark in photo 2) in the evaporator pit that was not pumped out. With the high water lines shown in the 1983 photo and the roof not being repaired until 1993, the potential was created for thousands of gallons of liquid waste to be released to the environment. Photo 3 shows the build up of residue, which would be a part of the potential release.

The sumps in the evaporator pit and pump room are dry indicating that they have leaked or evaporated to the environment. Radiological sampling performed (see figures 1 and 2 taken from the 1983 characterization report) in 1983 indicates that sumps aren't as contaminated as the floor areas in the evaporator pit or pump room. The surveys show areas as high as 18000 mr/hr RAD contamination levels in the area of the lead shielding (see photo # 2). All of the potential releases may be contaminated to the same levels that are found in the V-tanks.

**Part B – To Be Completed By Contractor WAG Manager**

4. Recommendation:

■ This site meets the requirements for an inactive waste site, requires investigation, and should be included in the INEEL FFA/CO Action Plan. Proposed Operable Unit assignment is recommended to be included in the FFA/CO.
WAG: 1 Operable Unit: 1-10

☐ This site DOES NOT meet the requirements for an inactive waste site, DOES NOT require investigation, and should NOT be included in the INEEL FFA/CO Action Plan.

5. Basis for the recommendation:

TAN616 was identified in the OU 1-10 Comprehensive RI/FS Work Plan as a Co-Located Facility based on its potential for having had past releases to the environment. It is 9.8 ft east of the V-Tanks and is physically connected to the tanks by waste transfer piping. Through past surveys, the building is known to be radioactively contaminated, but the extent of non-radioactive contamination is not known. Based on discussions with personnel familiar with TAN 616, known historical leaks into the building, connection with the V-Tanks, and high radiation levels under the lead sheeting laying on the basement floor, there is a potential for a release to the environment.

Known leaks have occurred within the evaporator pit and have a high potential for releasing contaminates to the environment. The evaporator pit should be investigated as a new site under the FFA/CO to determine if there is a risk posed to human health and/or the environment that should be remediated.

The basis for recommendation must include: 1) source description; 2) exposure pathways; 3) potential contaminants of concern; and 4) descriptions of interfaces with other programs, as applicable (e.g.: D&D, Facility Operations)

6. Contractor WAG/Project Manager Certification: I have examined the proposed site and the information submitted in this document and believe the information to be true, accurate, and complete. My recommendation is indicated in Section 4 above.

Name: D. L. Michael Signature: Daniel Lee Michael Date: 7-16-98

**Part C - To Be Completed By DOE WAG Manager**

7. DOE WAG Manager Concurrence:

WAG - 1 Operable Unit: 1-10

☒ Concur with recommendation.

☐ Do not concur with the recommendation. Explanation follows:

Name: R. Mark Shaw Signature: RMShaw Date: 7/20/98

**Part D - To Be Completed By the INEEL FFA/CO Responsible Program Managers (RPM's)**

8. FFA/CO RPM 's Concurrence:

For DOE-ID

Name: Kathleen Hain Signature: Kathleen E Hain Date: 7/24/98

☒ Concur

☐ Do not concur. Explanation follows:

For EPA Region X

Name: Wayne Pierre Signature: Wayne Pierre Date: 9/3/98

☒ Concur

☐ Do not concur. Explanation follows:

For State of Idaho

Name: Dean Nygard Signature: Dean J. Nygard Date: 10/19/98

☒ Concur

☐ Do not concur. Explanation follows:

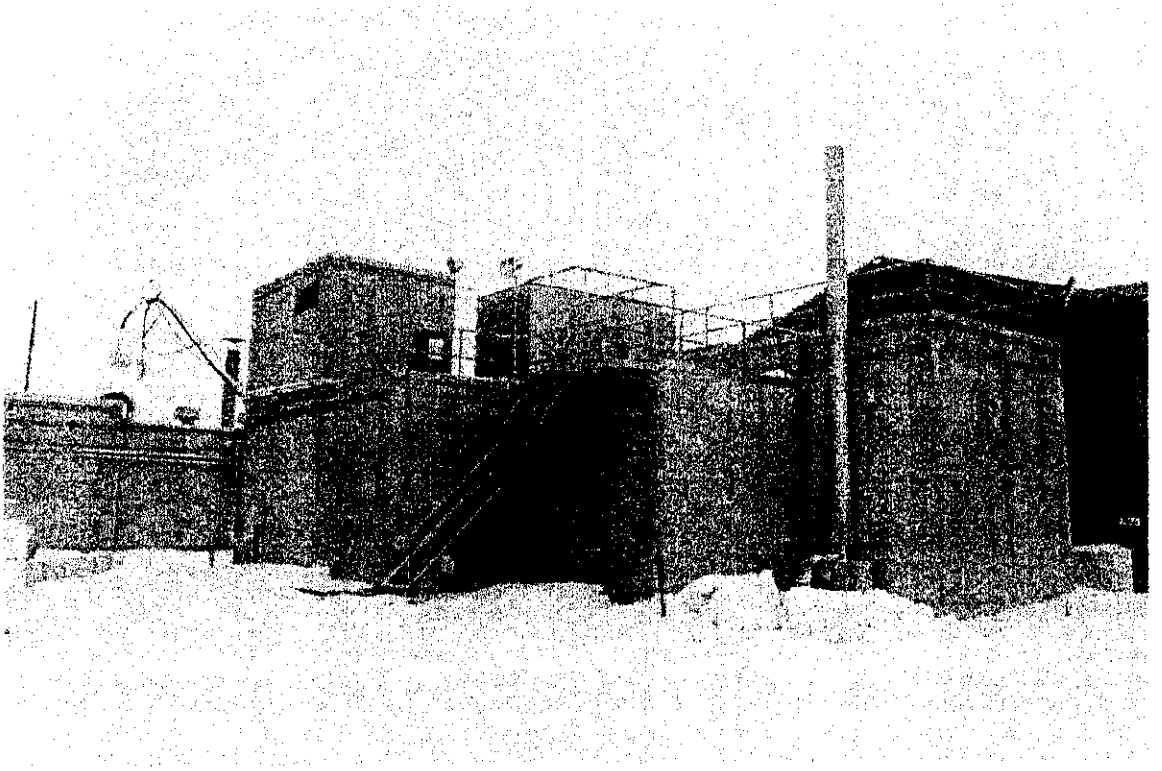


Photo 1. TAN 616 Liquid Waste Treatment Facility

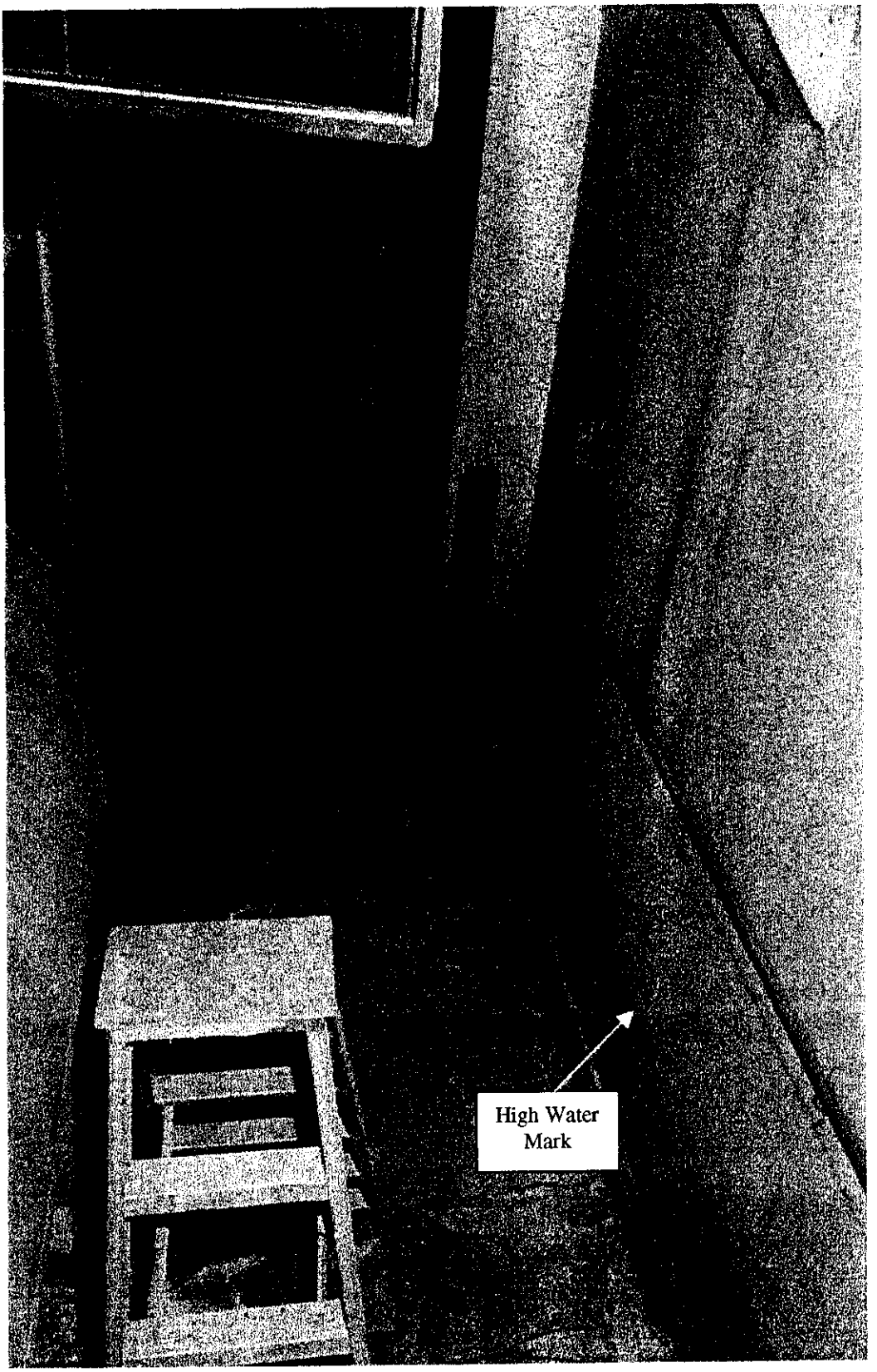



Photo 2. Evaporator Pit

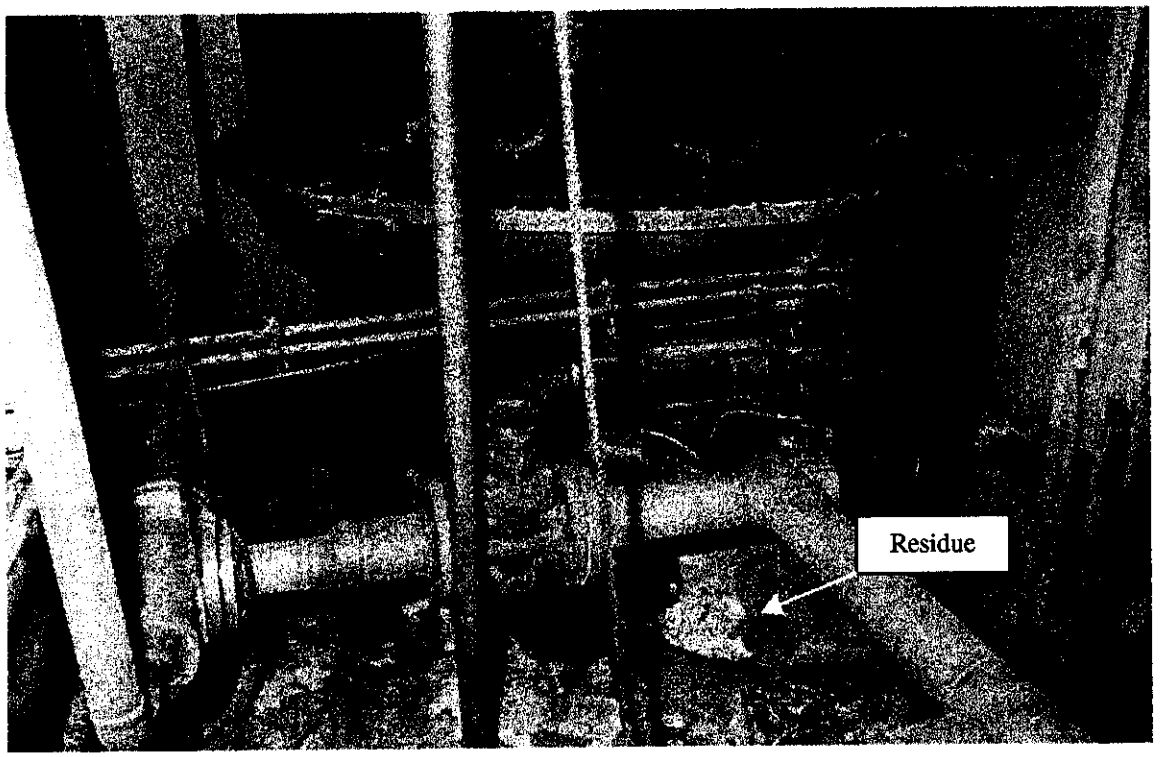



Photo 3. Residue Build Up

Figure 1. Radiation survey readings on TAN-616 main floor (mR/hr).

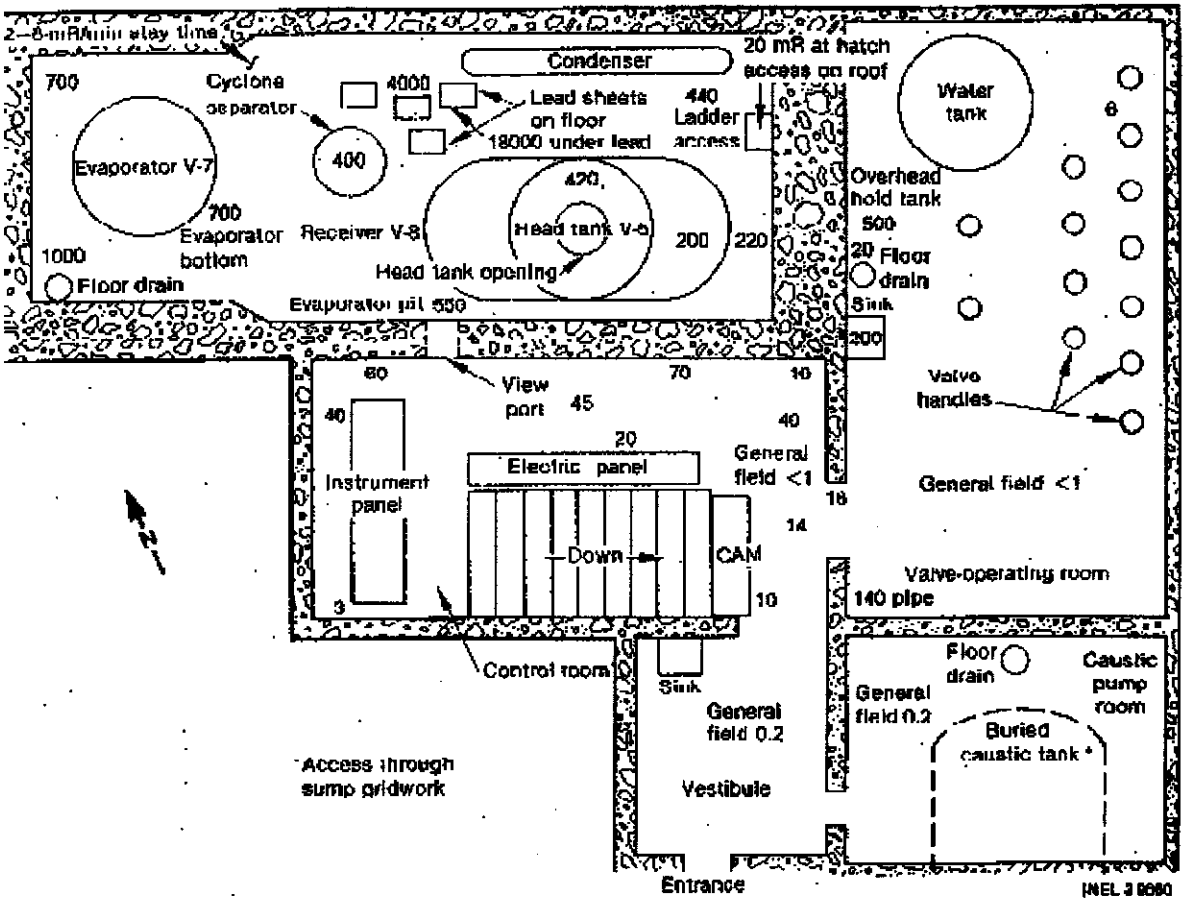
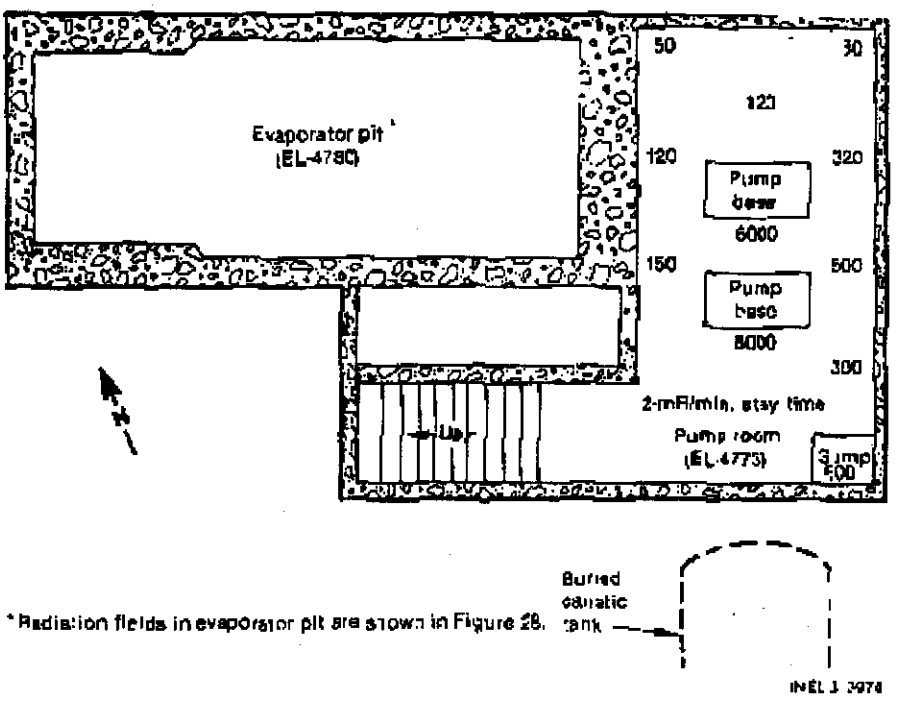



Figure 2B. Radiation survey readings on TAN-616 main floor (in mR/hr).




*Radiation fields in evaporator pit are shown in Figure 28.

Figure 29. Radiation survey readings in TAN-616 basement (in mR/hr).

Figure 2. Radiation survey readings in TAN-16 basement (mR/hr).